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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/255,856	02/23/1999	TOMIO IWASAKI	501.39631X00	9089

7590 10/09/2002  
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ARLINGTON, VA 22209

EXAMINER

SMOOT, STEPHEN W

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 10/09/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application N .

09/255,856

Applicant(s)

IWASAKI ET AL.

Examiner

Stephen W. Smoot

Art Unit

2813

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 18 September 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on 18 September 2002. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 1, 2, 4-6, 9-20, 22-25, 27-29, 31-35 and 37.Claim(s) objected to: NONEClaim(s) rejected: 3, 30 and 36.Claim(s) withdrawn from consideration: NONE

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_

*Carl Whitehead, Jr.*  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Continuation of 5. does NOT place the application in condition for allowance because:

Regarding the applicant's argument concerning the diffusion of copper into silicon versus the diffusion of copper into silicon oxide and the challenge to point out the pertinent teachings of Hussein et al., the applicant is first directed to column 1, lines 12-21 where Hussein et al. explain that interconnects include metal lines that connect to active and passive devices that are formed in a substrate. The substrate is typically silicon. Hussein et al. then go on to state that known structures (implying the above active/passive devices) are not illustrated (see column 2, lines 58-67). Fig. 1 clearly shows that dielectric layer (3) is formed on semiconductor substrate (1) (also see column 3, lines 1-2). Hussein et al. then state that the barrier layer (5) keeps metal from diffusing into the underlying (implying silicon substrate) and adjacent dielectric layer (see column 3, lines 9-11). The applicant is also referred to MPEP section 2144.01 regarding the use of implicit disclosures for supporting 35 USC 103(a) rejections.

Regarding the applicant's argument that there are unobvious differences based on the claimed processes used to obtain the claimed product, the examiner notes that a declaration containing the to be relied upon evidence has yet to be filed with the Office. Also, as requested, the examiner has made an attempt to contact the applicant's attorney regarding the status of this evidentiary showing. If it can be shown that the information provided in the "Sketch" was known by the applicant at the time of the invention, it might be sufficient to overcome the prior art rejection to claim 3, since the IBM Technical Disclosure Bulletin does not teach or suggest forming ruthenium films by sputtering. However, the examiner notes that claims 30, 36 would remain rejected, since the PVD film in these claims can be the neighboring film or the copper film and Hussein et al. suggest a sputtered copper liner layer (7) (see column 3, lines 43-58).